

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-24 are pending in the application, with 1, 13, 14, 16, and 23 being the independent claims. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Description of the Invention

The present invention is directed to a heater assembly to heat a platen of a biometric image capturing device above room temperature. Heating the platen reduces or eliminates moisture and/or fluids on a biometric object that change the relative humidity around the area of the platen where the biometric object is placed. The reduction or elimination of excess moisture surrounding the biometric object on the platen prevents a halo effect from appearing in the biometric image.

In embodiments of the invention, the heater assembly comprises an electrically transparent conductive film which dissipates power when an electrical current is emitted through the film. At least two electrical conductors are attached to the film. Each of the conductors serves as a contact point for a connector, which transfers electrical current from a power source to each of the conductors. A temperature sensor may also be attached on or near the conductive film.

In an embodiment, the heater assembly is used to directly heat the biometric receiving surface or platen. In this embodiment, the facet of the prism for receiving the biometric object is heated to prevent formation and/or remove excess moisture on the platen, thereby preventing the halo effect. In other embodiments, an adjacent face of the prism (i.e., a facet of the prism that does not receive the biometric object) is heated to prevent formation and/or remove excess moisture on the platen, thereby preventing the halo effect. In embodiments of the invention, electrical heating elements are attached to the platen at locations where they do not affect the image illumination or fingerprint imaging. For example, in some embodiments, the electrical heating elements are located at the ends of the prism platen.

Rejections under 35 U.S.C. § 102

In the Office Action, dated August 27, 2002, the Examiner rejected claims 1, 2, 4-6, 8, and 11-13 under 35 U.S.C. § 102(b) as being anticipated by EP 785,750. The Applicants respectfully traverse this rejection.

EP 785,750 does not teach or suggest present invention's heater assembly comprising a transparent conductive film having a first and second conductor attached to first and second edge of the transparent conductive film, respectively, to control the temperature in the transparent conductive film. The present invention heats up the transparent conductive film in order to eliminate excess moisture from it. By eliminating excess moisture from the transparent conductive film, a halo effect is reduced.

EP 785,750 describes an apparatus and method for imaging skin ridges having a light transmissive body with a receiving surface (2) and a light source for illuminating

the surface. The receiving surface (2) includes a heating means (7, 8) to heat the skin ridges to *generate additional moisture from the skin* of the object. (See, EP 785,750, Col. 3, Lines 12-52). Furthermore, a transparent conductive layer (7) is placed on top of the transparent layer (8) and acts as a passivation layer. The heating means (7, 8) further include a control means (10), which serve to vary the current in the transparent layer (8). During the entire time that an object is in contact with the receiving surface (2), the receiving surface (2) is heated. (See, EP 785,750, Col. 3, Lines 39-41).

The receiving surface (2) is heated in operation to a room temperature of 37°C (approximately equivalent to 98.6°F). The operating temperature range of the apparatus in EP 785,750 is between 25°C and 50°C (approximately equivalent to a range of 77°F to 122°F) but preferably between 30°C to 39°C (approximately equivalent to a range of 86°F to 102.2°F). (See, EP 785,750, Col. 4, Lines 39-43). The skin of the object is heated within these temperature ranges, so that the skin pores are able to secrete sweat, thus, making the skin more elastic.

However, the apparatus in EP 785,750 does not eliminate the halo effect, which is produced when the skin is so heated that the skin's pores generate additional moisture. This is different from the present invention, where the heater assembly generates heat in order to eliminate additional moisture so that a halo effect is reduced. By reducing the halo effect a clearer image of the biometric object is generated.

Moreover, the heater assembly in the present invention controls the temperature of the platen, whereas the apparatus in EP 785,750 heats the receiving surface at all times, while the skin is in contact with the receiving surface. The heater assembly in the present invention operates in various temperature ranges (See, specification, FIG. 8). In

the initial state (temperature of the platen is $< 115^{\circ}\text{F}$), the heater assembly generates heat full power in order to heat up the platen and remove moisture from the skin of the biometric object. In the first threshold state (temperature of the platen is $\geq 115^{\circ}\text{F}$), the heater assembly generates heat at half power to partially heat up the platen and remove any additional moisture from the platen. When the temperature of the platen reaches 121°F , the heater assembly does not generate heat, because at or above this temperature, moisture is eliminated from the platen and the halo effect is substantially reduced. This is different from the apparatus in EP 785,750, where the apparatus heats up receiving surface (2) to 37°C (or approximately 98.6°F) – temperature sufficient for a human body to begin generating sweat. Furthermore, the apparatus in EP 785,750 operates in temperature ranges directed to counter effect of eliminating moisture from the receiving surface (2). Whereas, the present invention is directed to eliminate the moisture from the platen and reduce the halo effect associated with it.

Therefore, this rejection of claim 1 is traversed. Because claim 1 is not anticipated by EP 785,750 and claims 2, 4-6, 8, and 11 are dependent from claim 1, claims 2, 4-6, 8, and 11 are not anticipated by EP 785,750. Therefore, rejection of claims 2, 4-6, 8, and 11 is traversed as well. The Examiner is respectfully requested to reconsider and withdraw this rejection.

Similar arguments apply to traversing Examiner's rejection of independent claim 13 based on EP 785,750. Therefore, the Examiner is respectfully requested to reconsider and withdraw his rejection of claim 13, as well.

Rejections under 35 U.S.C. § 103

In the Office Action, dated August 27, 2002, the Examiner rejected claims 3, 7, 9, and 10 under 35 U.S.C. § 103(a) as being unpatentable over EP 785,750 in view of JP1-205392. The Examiner stated that the elements described in claims 3, 7, 9, and 10 would have been obvious to a person having ordinary skill in the art. This rejection is respectfully traversed for at least the reasons set forth above.

Based on the above arguments, it would not have been obvious to one having ordinary skill in the art at the time the invention was made to include a control system contained within the power source (*See*, claim 3). It would not be obvious to one having ordinary skill in the art to indirectly heat the biometric receiving surface (*See*, claim 7). Also, it would not have been obvious to use conductive materials such as silver and copper (*See*, claim 9). Finally, it would not have been obvious to include the use of translucent pads (*See*, claim 10). The elements of claims 3, 7, 9, and 10 are not achieved through methods described in EP 785,750 and JP1-205392 or their combination. No suggestion or motivation is provided by combination of EP 785,750 and JP1-205392 for including a control system within a power source, or indirectly heating the biometric receiving surface, or using conductive materials such as copper and silver, or using translucent pads. Thus, it is respectfully submitted that recitation of In re Fridolph, 50 CCPA 745, 89 F.2d 509, 135 USPQ 319, In re Lockhart, 90 USPQ 214 (CCPA 1951), In re Larson, 144 USPQ 347, and Howard v. Detroit Stove Works, 150 US 164 (1893) is unfounded.

Claims 3, 7, 9, and 10 are dependent claims from independent claim 1. Because subject matter of claim 1 is not taught or suggested by EP 785,750 and all dependent

claims from claim 1 include elements of claim 1, therefore the subject matter of claims 3, 7, 9, and 10 is not taught or suggested by EP 785,750. Therefore, Examiner's rejection of claims 3, 7, 9, and 10 under 35 U.S.C. § 103(a) as being unpatentable over EP 785,750 in view of JP1-205392 is traversed.

To further illustrate, JP1-205392 describes a finger picture input device having a prism 11 on which a finger is placed for scanning. A heating body 15 heats up prism 11 and raises the temperature of the finger's skin. Because temperature increases, the pores on the finger's skin generate sweat and increase presence of moisture on prism 11. This is different from the present invention, where the platen is heated to eliminate moisture. Therefore, the present invention is not taught or suggested by JP1-205392.

Thus, there is no suggestion or motivation to combine elements of the EP 785,750 and JP1-205392 to produce the present invention as claimed in claims 3, 7, 9, and 10. Furthermore, the combination of EP 785,750 and JP1-205392 does not teach or suggest any elements of the present invention, as described by claims 3, 7, 9, and 10. Therefore, the rejection is traversed. The Examiner is respectfully requested to reconsider and withdraw his rejection of claims 3, 7, 9, and 10.

In the Office Action, dated August 27, 2002, the Examiner rejected claims 14 and 15 under 35 U.S.C. § 103(a) as being unpatentable over EP 785,750 in view of U.S. Patent No. 5,825,474 to Maase. The Examiner stated that the elements described in claims 14 and 15 would have been obvious to a person having ordinary skill in the art. This rejection is respectfully traversed for at least the reasons set forth above.

Maase describes a platen cover system for protecting finger receiving surface. When the platen cover is closed, i.e., a finger is not applied to the finger receiving

surface for scanning, the platen cover system maintains finger receiving surface within a selected temperature. (*See*, Maase, Col. 2 , Lines 55-67 to Col. 3, Lines 1-26). This is unlike the present invention, where the heat is generated *near* a biometric object to be imaged. (*See*, claim 14). The heat is generated to remove moisture from the biometric object while the biometric object is being imaged, which in turn reduces the halo effect associated with additional moisture being present. Therefore, the elements of claim 14 are not taught or suggested by Maase.

The elements of claim 14 are not taught or suggested by EP 785,750 pursuant to at least the arguments set forth with respect to claim 1 above. Furthermore, it is not obvious to one having ordinary skill in the art to combine Maase and EP 785,750 to produce elements of claim 14. Finally, the combination of Maase and EP 785,750 does not teach or suggest any or all elements of claim 14.

Because claim 15 is a dependent claim from independent claim 14 and claim 14 is not taught or suggested by the combination of Maase and EP 785,750, the elements of claim 15 are not taught or suggested by the combination of Maase and EP 785,750. Therefore, the rejection of claims 14 and 15 is traversed. The Examiner is respectfully requested to reconsider and withdraw his rejection of claims 14 and 15.

In the Office Action, dated August 27, 2002, the Examiner rejected claims 16-24 under 35 U.S.C. § 103(a) as being unpatentable over JP1-205392 in view of U.S. Patent No. 5,946,135 to Aueswald et al. The Examiner stated that the elements described in claims 16-24 would have been obvious to a person having ordinary skill in the art. This rejection is respectfully traversed for at least the reasons set forth above.

Aueswald et al. describes a retroreflector system having a triple-mirror prism having three faces 1-3 located at right angles with respect to one another. Each of the faces 1-3 can have either two-dimensional interconnecting heating elements 5-7 (*See*, Aueswald et al., FIG. 2) or non-interconnecting heating elements 8-10 (*See*, Aueswald et al., FIG. 3) attached to faces 1-3. The retroreflector system described in Aueswald et al. is not suitable for generating images of a biometric object that is applied to a platen, as described by claims 16 and 23 of the present invention. Furthermore, according to claims 16 and 23, the biometric object is applied to the platen, while the platen is being heated. This, in turn, eliminates additional moisture from the platen and a halo effect associated with such additional moisture. (*See*, claims 16 and 23). Aueswald et al. does not describe heating apparatus for eliminating a halo effect in an image of the biometric object resting on the platen of an electronic image capturing device as described in claims 16 and 23.

The elements of claims 16 and 23 are not taught or suggested by JP1-205392 pursuant to the arguments presented with respect to claims 3, 7, 9, and 10 above. Furthermore, it is not obvious to one having ordinary skill in the art to combine Aueswald et al. and JP1-205392 to produce elements of claims 16 and 23. Finally, the combination of Aueswald et al. and JP1-205392 does not teach or suggest any or all elements of claims 16 and 23.

Because claims 17-22 and 24 are dependent claims from independent claims 16 and 23, respectively and claims 16 and 23 are not taught or suggested by the combination of Aueswald et al. and JP1-205392, the elements of claims 17-22 and 24 are not taught or suggested by the combination of Aueswald et al. and JP1-205392. Therefore, the

rejection of claims 16-24 is traversed. The Examiner is respectfully requested to reconsider and withdraw his rejection of claims 16-24.

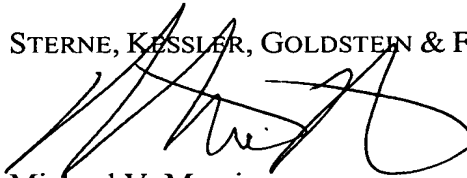
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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